

WHAT IS CLAIMED IS:

1. A wiring board obtained by coating a copper paste on a ceramic green sheet and firing it to form a conductor layer and an insulating layer, the copper paste comprising a copper powder, an organic vehicle and at least one selected from the group consisting of: an  $\text{SiO}_2$  particle having an average particle size of 50 nm or less; and a ceramic particle having an average particle size of 100 nm or less and non-vitrifiable after sintering.

2. A wiring board obtained by coating a copper paste on a ceramic green sheet and firing it to form a conductor layer and an insulating layer, the copper paste comprising a copper powder, an organic vehicle and an  $\text{SiO}_2$  particle having an average particle size of 50 nm or less.

3. A wiring board obtained by coating a copper paste on a ceramic green sheet and firing it to form a conductor layer and an insulating layer, the copper paste comprising a copper powder, an organic vehicle and a ceramic particle having an average particle size of 100 nm or less and non-vitrifiable after sintering.

4. The wiring board according to claim 1, wherein the conductor layer has a resistivity of  $3 \times 10^{-6} \Omega \cdot \text{cm}$  or

less.

5. The wiring board according to claim 1, wherein the insulating layer comprises an alkali metal in amount of 0.5 mol% or less in terms of oxide.

6. The wiring board according to claim 1, wherein the conductor layer comprises an inorganic material having an average particle size of 2  $\mu\text{m}$  or less, the inorganic material being dispersed within the conductor layer so as not to be exposed to an outside of the conductor layer.

7. The wiring board according to claim 1, wherein a surface of the conductor layer is subjected to a plating treatment.

8. A wiring board comprising a conductor layer containing an inorganic material dispersed within the conductor layer, wherein in a cross section in a thickness direction of the conductor layer, a total area of the inorganic material having a particle size of 2  $\mu\text{m}$  or more is 5% or less of the sectional area of the conductor layer.

9. A wiring board comprising a conductor layer containing an inorganic material dispersed within the

conductor layer, wherein in a cross section in a thickness direction of the conductor layer, a total area of the inorganic material having a particle size of 3  $\mu\text{m}$  or more is 2% or less of the sectional area of the conductor layer.

10. The wiring board according to claim 8, wherein a surface of the conductor layer is subjected to a plating treatment.

11. A copper paste comprising a copper powder, an organic vehicle and at least one selected from the group consisting of: an  $\text{SiO}_2$  particle having an average particle size of 50 nm or less; and a ceramic particle having an average particle size of 100 nm or less and non-vitrifiable after sintering.

12. The copper paste according to claim 11, wherein the  $\text{SiO}_2$  particle is in an amount of 0.1 to 5.0 parts by mass per 100 parts by mass of the copper powder.

13. The copper paste according to claim 11, which further comprises a vitreous ceramic particle or a ceramic particle vitrifiable after sintering.

14. The copper paste according to claim 11, which

comprises more than 20 parts by mass of the organic vehicle per 100 parts by mass of the copper powder.

15. A method for producing a wiring board comprising the steps of:

coating the copper paste according to claim 11 on a ceramic green sheet;

exposing the coated sheet to a wet nitrogen atmosphere at 650 to 900°C so as to remove organic components; and

firing the sheet at 850 to 1,050°C after the exposing.